AMENDMENT TO THE CLAIMS:

The following list of claims shall replace all prior listings or versions of the claims in the present application.

1. (Currently amended) A method of enhancing the effects of radiation directed to a tissue or a population of cells in an animal comprising administering an amount of metal nanoparticles to said animal and subsequently irradiating the animal with radiation directed to said tissue or said population of cells, wherein said radiation is in a form selected from the group consisting of x-rays, microbeam arrays of x-rays, radioisotopes, electrons, protons, ion beams, and neutrons.

2. (Currently amended) A method of ablating a tissue or a population of cells in an animal comprising administering an amount of metal nanoparticles to said animal and subsequently irradiating the animal with radiation directed to said tissue or said population of cells, wherein said radiation is in a form selected from the group consisting of x-rays, microbeam arrays of x-rays, radioisotopes, electrons, protons, ion beams, and neutrons.

3. (Original) The method of claim 1 or 2, wherein said animal is human.

4. (Original) The method of claim 1 or 2, wherein said tissue or said population of cells is tumor.

5. (Original) The method of claim 4, wherein said tumor is a solid tumor selected from the group consisting of carcinomas, brain tumor, melanomas, lymphomas, plasmocytoma, sarcoma, glioma and thymoma.

6. (Original) The method of claim 4, wherein said tumor is myeloma, leukemia, or a tumor of oral cavity, pharynx, digestive system, respiratory system, bones, joints, soft tissue, skin, breast, genital system, urinary system, eye, orbit, the nervous system, or endocrine system.

7. (Original) The method of claim 1 or 2, wherein said tissue or said population of cells are selected from plaques of blood vessels, mesangial cells or basement membrane of kidney, adipocytes, infected lung cells, infected red blood cells, or bone tissue.

8. (Original) The method of claim 1 or 2, wherein said metal nanoparticles comprise at least one heavy metal selected from the group consisting of gold, silver, platinum, palladium, cobalt, iron, copper, tin, tantalum, vanadium, molybdenum, tungsten, osmium, iridium, rhenium, hafnium, thallium, lead, bismuth, gadolinium, dysprosium, holmium, and uranium.

9. (Original) The method of claim 8, wherein said metal nanoparticles comprise at least gold.

10. (Original) The method of claim 8, wherein said nanoparticles comprise at least two heavy metals from said group.

11. (Currently amended) The method of claim 1 or 2, wherein the ~~size~~ sizes of ~~the~~ metal cores of said nanoparticles ~~is~~ are in the range of 0.8 to 400 nm in diameter.

12. (Currently amended) The method of claim 11, wherein the ~~size~~ sizes of ~~the~~ metal cores ~~is~~ are in the range of 0.8-3 nm and wherein said metal is gold.

13. (Currently amended) The method of claim 11, wherein the ~~size~~ sizes of ~~the~~ metal cores ~~is~~ are in the range of 1-2 nm and wherein said metal is gold.

14. (Original) The method of claim 1 or 2, wherein said metal nanoparticles comprise a surface layer material.

15. (Original) The method of claim 14, wherein said surface layer material comprises a molecule comprising a sulfur, phosphorus or amine group.

16. (Original) The method of claim 15, wherein said molecule is thioglucose.

17. (Original) The method of claim 14, wherein said surface layer material is a molecule selected from the group consisting of a synthetic polymer, a peptide or polypeptide, an antibody or a fragment thereof, a nucleic acid, a carbohydrate molecule, a lipid molecule, a drug, or synthetic molecule.

18. (Original) The method of claim 1 or 2, wherein said nanoparticles are polyanions of metals complexed with quaternary ammonium salts for use in radiation enhancement.

19. (Original) The method of claim 1 or 2, wherein said metal nanoparticles comprises a targeting molecule, wherein said targeting molecule binds specifically to molecules localized within said tissue or said population of cells.

20. (Original) The method of claim 19, wherein said targeting molecule is a peptide or an antibody.

21. (Original) The method of claim 19, wherein said tissue or said population of cells is tumor and said targeting molecule binds specifically to angiogenic molecules in the endothelium of said tumor.

22. (Original) The method of claim 1 or 2, wherein said metal nanoparticles are administered to said animal by intravenous or intra-aretrial injection, direct injection into said tissue or population of cells, implantation of a device capable of a slow release of said metal nanoparticles, or injection into a body cavity.

23. (Previously presented) The method of claim 1 or 2, wherein said metal nanoparticles are administered to said animal in an amount to achieve a concentration in said tissue or said population of cells in the animal of at least about 0.1% metal by weight.

24. (Canceled)

25. (Currently amended) The method of claim ~~24~~1 or 2, wherein said radiation is in the form of x-rays at a dose of about 1 KeV to about 25,000 KeV.

26-43. (Canceled)

44. (New) A method of enhancing the effects of radiation directed to a tissue or a population of cells in an animal, said method consisting of administering an amount of metal nanoparticles to

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said animal and subsequently irradiating the animal with radiation directed to said tissue or said population of cells.

45. (New) The method of claim 44, wherein said tissue or said population of cells in said animal are ablated.

46. (New) The method of claim 44, wherein said animal is human.

47. (New) The method of claim 44, wherein said tissue or said population of cells is tumor.

48. (New) The method of claim 44, wherein said tumor is a solid tumor selected from the group consisting of carcinomas, brain tumor, melanomas, lymphomas, plasmocytoma, sarcoma, glioma and thymoma.

49. (New) The method of claim 48, wherein said tumor is myeloma, leukemia, or a tumor of oral cavity, pharynx, digestive system, respiratory system, bones, joints, soft tissue, skin, breast, genital system, urinary system, eye, orbit, the nervous system, or endocrine system.

50. (New) The method of claim 44, wherein said tissue or said population of cells are selected from plaques of blood vessels, mesangial cells or basement membrane of kidney, adipocytes, infected lung cells, infected red blood cells, or bone tissue.

51. (New) The method of claim 44, wherein said metal nanoparticles comprise at least one heavy metal selected from the group consisting of gold, silver, platinum, palladium, cobalt, iron, copper, tin, tantalum, vanadium, molybdenum, tungsten, osmium, iridium, rhenium, hafnium, thallium, lead, bismuth, gadolinium, dysprosium, holmium, and uranium.

52. (New) The method of claim 51, wherein said metal nanoparticles comprise at least gold.

53. (New) The method of claim 51, wherein said nanoparticles comprise at least two heavy metals from said group.

54. (New) The method of claim 44, wherein the sizes of metal cores of said nanoparticles are in the range of 0.8 to 400 nm in diameter.

55. (New) The method of claim 54, wherein the sizes of metal cores are in the range of 0.8-3 nm and wherein said metal is gold.

56. (New) The method of claim 54, wherein the sizes of metal cores are in the range of 1-2 nm and wherein said metal is gold.

57. (New) The method of claim 44, wherein said metal nanoparticles comprise a surface layer material.

58. (New) The method of claim 57, wherein said surface layer material comprises a molecule comprising a sulfur, phosphorus or amine group.

59. (New) The method of claim 58, wherein said molecule is thioglucose.

60. (New) The method of claim 57, wherein said surface layer material is a molecule selected from the group consisting of a synthetic polymer, a peptide or polypeptide, an antibody or a fragment thereof, a nucleic acid, a carbohydrate molecule, a lipid molecule, a drug, or synthetic molecule.

61. (New) The method of claim 44, wherein said nanoparticles are polyanions of metals complexed with quaternary ammonium salts for use in radiation enhancement.

62. (New) The method of claim 44, wherein said metal nanoparticles comprises a targeting molecule, wherein said targeting molecule binds specifically to molecules localized within said tissue or said population of cells.

63. (New) The method of claim 62, wherein said targeting molecule is a peptide or an antibody.

64. (New) The method of claim 61, wherein said tissue or said population of cells is tumor and said targeting molecule binds specifically to angiogenic molecules in the endothelium of said tumor.

65. (New) The method of claim 44, wherein said metal nanoparticles are administered to said animal by intravenous or intra-aretrial injection, direct injection into said tissue or population of cells, implantation of a device capable of a slow release of said metal nanoparticles, or injection into a body cavity.

66. (New) The method of claim 44, wherein said metal nanoparticles are administered to said animal in an amount to achieve a concentration in said tissue or said population of cells in the animal of at least about 0.1% metal by weight.

67. (New) The method of claim 66, wherein said radiation is in a form selected from x-rays, microbeam arrays of x-rays, radioisotopes, visible light, lasers, infrared, microwave, radio frequencies, ultraviolet radiation, electrons, protons, ion beams, or neutrons.

68. (New) The method of claim 67, wherein said radiation is in the form of x-rays at a dose of about 1 KeV to about 25,000 KeV.